

REMARKS

In response to the Office Action mailed January 27, 2009, Applicant respectfully requests reconsideration. To advance the prosecution of this application, amendments have been made in the claims, and each of the rejections set forth in the Office Action has been carefully considered and is addressed below. The claims as presented are believed to be in condition for allowance.

Claims 1, 3 and 5-11 were previously pending in this application. Claims 1 and 11 are amended herein. No claims are added or canceled. As a result, claims 1, 3 and 5-11 remain pending for examination, with claims 1 and 11 being independent. No new matter has been added.

Claim Rejections Under 35 U.S.C. §112

Claims 1, 3 and 5-11 are rejected under 35 U.S.C. §112, first paragraph, for purportedly failing to satisfy the written description requirement. Specifically, the Office Action contends that the limitations added to independent claims 1 and 11 in Applicant's previous response (i.e., which recite that the recited sensitizing dye be an inorganic complex dye) lack support in the specification.

These limitations has been removed from claims 1 and 11, rendering this rejection moot.

Claim Rejections Under 35 U.S.C. §103

Claims 1, 3 and 5-11 are rejected under 35 U.S.C. §103(a) as purportedly being obvious over a paper entitled "Dye-Sensitized Solar Cells Using Semiconductor Thin Film Composed Of Titania Nanotubes," by Adachi et al. ("Adachi") in view of U.S. Patent No. 5,350,644 to Graetzel et al. ("Graetzel"), U.S. Patent No. 6,376,765 to Wariishi et al. ("Wariishi") and U.S. Patent No. 6,586,670 to Yoshikawa ("Yoshikawa"). Each of independent claims 1 and 11 is amended herein, and patentably distinguishes over any combination of the asserted references.

A. Claims 1-10

Amended claim 1 recites a dye-sensitized photoelectric transfer device comprising a semiconductor layer containing titania nanotubes, and a sensitizing dye retained by the titania nanotubes, wherein the sensitizing dye has no acidic substituents. Particles of the sensitizing dye do not associate with each other, and no suppression of dye association is performed. A photoelectric transfer efficiency of the photoelectric transfer device is greater than about 10%. The sensitizing dye is a metal complex dye comprising at least a metal, with the metal comprising an element other than iron, ruthenium and osmium.

Support for the amendments herein to claim 1 may be found in Applicant's specification at, for example, p. 5, line 22 – p. 6, line 13.

Independent claim 1 patentably distinguishes over any combination of the asserted references, as none of the cited references discloses or suggests a sensitizing dye which is a metal complex dye comprising a metal which comprises an element other than iron, ruthenium and osmium. In this respect, Graetzel, which the Office Action relies on to satisfy the claim limitations directed to a sensitizing dye having no acidic substituents, says nothing at all about a sensitizing dye which is a metal complex dye comprising a metal which comprises an element other than iron, ruthenium and osmium. Indeed, all of the sensitizing dyes disclosed by Graetzel include ruthenium (see, e.g., Tables 1 and 2 and col. 5, lines 35-37).

Wariishi, which the Office Action contends discloses dyes which may be employed in dye-sensitized solar cells (Office Action, p. 6), fails to remedy this deficiency of Graetzel, as Wariishi also fails to disclose a sensitizing dye which is a metal complex dye comprising a metal which comprises an element other than iron, ruthenium and osmium. Similarly, neither Adachi nor Yoshikawa discloses or suggests a sensitizing dye which is a metal complex dye comprising a metal which comprises an element other than iron, ruthenium and osmium.

Accordingly, amended claim 1 patentably distinguishes over any combination of the asserted references, such that the rejection of claim 1, and of each of claims 2-10 which depends therefrom, under 35 U.S.C. §103(a) for purportedly being obvious over Adachi in view of Graetzel, Wariishi and Yoshikawa should be withdrawn.

B. Claim 11

Amended claim 11 recites a method of manufacturing a dye-sensitized photoelectric transfer device. The method comprises providing a semiconductor layer containing titania nanotubes, and retaining a sensitizing dye with the titania nanotubes, wherein the sensitizing dye has no acidic substituents. Particles of the sensitizing dye do not associate with each other and no suppression of dye association is performed. A photoelectric transfer efficiency of the photoelectric transfer device is greater than about 10%. The sensitizing dye is a porphyrin-based compound.

Support for the amendments to claim 11 provided herein may be found in Applicant's specification at, for example, p. 5, line 22 – p. 6, line 13.

Amended claim 11 patentably distinguishes over any combination of the asserted references. For example, none of the cited references discloses or suggests a sensitizing dye which is a porphyrin-based compound. For example, Graetzel, which is relied upon by the Office Action to satisfy claim limitations directed to a sensitizing dye having no acidic substituents, says nothing at all about a sensitizing dye which is a porphyrin-based compound, as required by claim 11. None of Wariishi, Adachi or Yoshikawa discloses a sensitizing dye which is a porphyrin-based compound.

Accordingly, amended claim 11 patentably distinguishes over any combination of the asserted references, such that the rejection of claim 11 under 35 U.S.C. §103(a) for purportedly being obvious over Adachi in view of Graetzel, Wariishi and Yoshikawa should be withdrawn.

CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, the Director is hereby authorized to charge any deficiency or credit any overpayment in the fees filed, asserted to be filed or which should have been filed herewith to our Deposit Account No. 23/2825, under Docket No. S1459.70075US00.

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Respectfully submitted,

By Randy J. Pritzker
Randy J. Pritzker
Registration No.: 35,986
WOLF, GREENFIELD & SACKS, P.C.
Federal Reserve Plaza
600 Atlantic Avenue
Boston, Massachusetts 02210-2206
617.646.8000